

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2001-NM-329-AD; Amendment 39-13109; AD 2003-07-13]**

**RIN 2120-AA64**

### **Airworthiness Directives; Boeing Model 757-200, -200CB, and -200PF Series Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD), applicable to certain Boeing Model 757 series airplanes, that currently requires repetitive inspections for excessive wear of the internal and external splines of the torque tube couplings of the trailing edge flaps, and replacement of the couplings, if necessary. That AD also provides an optional modification that, if installed, constitutes terminating action for the inspection requirements. This amendment expands the applicability of the existing AD and requires new inspections of the torque tube assemblies and certain gearbox assemblies and universal joints in the drive system for the inboard trailing edge flaps, and follow-on actions if necessary. For certain airplanes, this amendment also adds a new optional modification, which, if installed, terminates certain inspections. The actions specified by this AD are intended to prevent separations in the drive system for the inboard trailing edge flaps, which could cause a flap skew condition that could result in damage to the flaps or fuselage, and consequent reduced controllability of the airplane.

**DATES:** Effective May 20, 2003.

The incorporation by reference of certain publications, as listed in the regulations, is approved by the Director of the Federal Register as of May 20, 2003.

The incorporation by reference of certain other publications, as listed in the regulations, was approved previously by the Director of the Federal Register as of December 23, 1992 (57 FR 54298, November 18, 1992).

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Douglas Tsuji, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6487; fax (425) 917-6590.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 92-25-01, amendment 39-8416 (57 FR 54298, November 18, 1992), which is applicable to certain Boeing Model 757 series airplanes, was published in the Federal Register on May 29, 2002 (67 FR 37357). The action proposed to continue to require repetitive inspections for excessive wear of the internal and external splines of the torque tube couplings of the trailing edge flaps, and replacement of the couplings, if necessary. The action proposed to expand the applicability of the existing AD and require new inspections of the torque tube assemblies and certain gearbox assemblies and universal joints (U-joints) in the drive system for the inboard trailing edge flaps, and follow-on actions if necessary. For certain airplanes, the action also proposed to require a previously optional modification and/or a new modification, which would terminate certain inspections.

### **Explanation of New Relevant Service Information**

Since the issuance of the proposed AD, the FAA has reviewed and approved Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002. The proposed AD refers to Revision 1 of that service bulletin, dated December 2, 1999, as the appropriate source of service information for the proposed inspections and corrective actions. Boeing issued Revision 2 of the service bulletin primarily to reduce the effectivity due to the installation of a flap-skew detection system on airplanes with line numbers 981 and subsequent. Boeing also made certain editorial changes in Revision 2 of the service bulletin. Since there are no changes in Revision 2 of the service bulletin that affect the actions required by this AD, we have revised paragraphs (b), (c), (d), and (e) of this AD to refer to Revision 2 of the service bulletin instead of Revision 1. The new paragraph (h) of this AD gives credit for inspections accomplished before the effective date of this AD per Revision 1 of the service bulletin.

### **Explanation of Changes to Proposed AD**

Because the language in Note 5 of the proposed AD is regulatory in nature, the provisions of that note have been included in paragraph (h) of this AD. Subsequent paragraphs and notes have been reidentified accordingly.

Also, for clarification, we have revised service bulletin references in the body of this AD to specify that the appropriate source for instructions is the Accomplishment Instructions of the service bulletin.

### **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

### **Support for the Proposal**

One commenter concurs with the proposed AD.

## **Request To Remove Terminating Action**

Two commenters request that we remove paragraphs (f) and (g) of the proposed AD. Those paragraphs would require replacing the numbers 3 and 6 and numbers 4 and 5 torque tube assemblies. Both commenters state that these replacements would be costly and burdensome to operators of the affected airplanes. One of the commenters, the airplane manufacturer, presents data that show that there have been no reported cases of trailing edge flap skew since the release of the original issue of Boeing Alert Service Bulletin 757-27A0125 on July 17, 1997. The commenter states that these data show that the proposed inspections are adequate to ensure the safety of the airplane fleet.

We partially concur with the commenters' request. We agree that it is not necessary to mandate replacement of the torque tube assemblies at this time. We consider three criteria for those situations where repetitive inspections may be permitted to continue indefinitely, even though a positive fix to the problem exists: (1) The area is easily accessible, (2) the damage is easily detectable, and (3) the consequences of the damage are not likely to be catastrophic. In consideration of the excessive wear that may occur on torque tube assemblies numbers 3 and 6 and numbers 4 and 5, we have determined that the circumstances meet these three criteria warranting the ability of owners and operators, at their option, to perform continual repetitive inspections.

However, we find that some operators may wish to replace and upgrade the affected torque tube assemblies in lieu of continuing to inspect indefinitely. Thus, we have determined that it is appropriate to leave the replacement of the torque tube assemblies as one option for compliance with this AD. Therefore, we have retained paragraphs (f) and (g) of the proposed AD in this final rule, but we have removed the required compliance times from those paragraphs. In addition, we have revised the Cost Impact section of the preamble of this AD to show the terminating modifications as optional.

## **Request To Revise Compliance Times for Initial Inspections**

Two commenters request that we extend the compliance time for certain initial inspections that would be required by the proposed AD. One commenter requests that we revise the initial compliance time for paragraphs (c) and (e) of the proposed AD from the latest of 3,000 total flight cycles, 24 months after the airplane's date of manufacture, and 18 months after the effective date of the AD, to the later of 24 months and a certain flight-cycle limit (e.g., 3,000 flight cycles) after the effective date of the AD. The second commenter requests that we revise the initial compliance time to not less than 24 months after the effective date of the AD. (This commenter does not specify to which paragraphs its request is intended to apply.) The second commenter states that its data do not support the proposed inspection timetable with respect to total flight cycles or calendar time since date of manufacture. It contends that wear is a function of cycles and should be free of calendar restriction. Both commenters are seeking an extension of the compliance time so that it will coincide with their approved "C"-check interval.

We concur with the commenters' request. The original intent of the 18-month compliance option in paragraphs (b)(2), (c), and (e) of the proposed AD was that it would coincide with "C"-check intervals for the majority of operators. This did not take into consideration that certain freighter configurations of Model 757-200 series airplanes have a "C"-check interval of 24 months. Thus, we have revised paragraphs (b)(2), (c), and (e) of this AD to require accomplishment of the initial inspections associated with those paragraphs prior to the accumulation of 3,000 total flight cycles, or within 24 months after the effective date of this AD, whichever is later.

## **Request To Revise Repetitive Inspection Interval**

One commenter requests that we revise the repetitive interval for the inspections of the gearbox assemblies and U-joints specified in paragraph (e) of the proposed AD. The proposed AD specifies that these inspections must be performed every 3,000 flight cycles or 24 months, whichever is first.

The commenter requests that we revise the interval to 3,000 flight cycles or 18 months, whichever comes first, to coincide with its "C"-check interval of the earliest of 6,000 flight hours, 3,000 flight cycles, and 18 months. The commenter presents data that show that Model 757 series airplanes typically reach the 18-month limit before they reach the 3,000-flight-cycle limit.

We partially concur with the commenter's request. We do not agree that it is necessary to reduce the intervals to meet the commenter's intent. Unless a "minimum" inspection interval is specified, operators are always permitted to perform actions earlier than the compliance time specified in an AD. In this case, it is at the operator's discretion to inspect its affected airplanes at the earlier of 18 months or 3,000 flight cycles, if that interval more closely fits the operator's maintenance schedule.

However, for clarification, we find that a change in terminology may be helpful. Therefore, we have revised paragraphs (b), (c), and (e) of this AD to state that repetitive inspections must be accomplished "at intervals not to exceed 3,000 flight cycles or 24 months, whichever comes first."

### **Request To Clarify Applicability of Inspection Requirement**

One commenter points out that one airplane, line number (L/N) 412, was omitted from paragraph (c) of the proposed AD. The commenter states that paragraph (c) should be corrected to identify "airplanes with L/Ns 1 through 580 inclusive, which are identified as Groups 1 and 2 airplanes" in the service bulletin.

We concur. While L/N 412 is included in Groups 1 and 2 in the service bulletin, that L/N was inadvertently omitted from paragraph (c) of the proposed AD. Our intention was for our AD to align with the referenced service bulletin; no differences were noted in the preamble of the proposed AD. Therefore, we have revised paragraph (c) of this AD to include L/N 412. Because the airplane with L/N 412 is not a U.S.-registered airplane, there is no economic impact on the U.S. fleet and, thus, we find that making this change will not increase the scope of the AD or the economic burden associated with the AD.

### **Request To Give Credit for Previously Accomplished Inspections**

One commenter requests that credit be given for inspections accomplished before the effective date of the AD per Revision 1 of the service bulletin. The commenter states that the compliance time for the first inspection should then be 3,000 flight cycles or 24 months from the most recent inspection.

We concur but find that no change is necessary to meet the commenter's intent. We give credit for actions accomplished before the effective date of an AD by means of the phrase "Compliance: Required as indicated, unless accomplished previously," which appears in every AD. As the commenter states, the next inspection must be done within 3,000 flight cycles or 24 months after the most recent inspection, whichever is first. No change is necessary in this regard. (Since we have revised this final rule to refer to Revision 2 of the service bulletin, credit for inspections per Revision 1 of the service bulletin is given in paragraph (h) of this AD.)

### **Request To Clarify Definition of Wear**

One commenter requests that we more clearly define excessive wear of the torque tube assemblies, as it pertains to the requirement for measurements in paragraph (d) of the proposed AD. The commenter states that normal, worn, and excessively worn areas are subject to interpretation, and different individuals could interpret wear differently.

We note that paragraph (d) of the proposed AD would require measurements "if any wear is found during any inspection required by paragraph (b) or (c) of this AD. \* \* \*." If wear is found during an inspection per paragraph (b) or (c) of this AD, the follow-on measurement required by paragraph (d) of this AD should provide adequate guidance as to the necessary course of action.

However, we find that it may be helpful to provide examples of some types of wear that may be found. Therefore, paragraphs (b), (c), and (d) of this AD have been revised to include examples of wear that may be found.

### **Request To Revise Compliance Threshold for Paragraph (e) of Proposed AD**

One commenter expresses concern over the inspections that would be required by paragraph (e) of the proposed AD and the requirement to replace the gearbox assembly and drive shaft assembly with new components if certain measurements are outside the limits specified in the service bulletin. The commenter is concerned about the potential cost of replacement parts, which it states may be as high as \$108,000. A second commenter, the Air Transport Association of America, on behalf of its members, requests that these costs be specified in the AD. The first commenter is also concerned about the availability of necessary parts within the compliance time specified in the proposed AD, and it requests that we revise the initial compliance time to correspond with spares availability. The commenter also requests that we allow repetitive inspections of the gearbox assemblies and U-joints, as allowed for the torque tubes elsewhere in the proposed AD, so that the gearboxes or drive shaft assemblies do not have to be replaced before further flight if the measurements are outside the specified limits.

We do not concur. The compliance times specified in this final rule represent an acceptable interval of time wherein affected airplanes may be allowed to operate without jeopardizing safety. Further, we find that allowing repetitive inspections in lieu of requiring replacement of discrepant parts with new parts would not ensure that the unsafe condition is addressed in a timely manner. The measurement criteria identified in paragraphs (e)(1) and (e)(2) of this AD represent the maximum wear limits for the gearboxes and U-joints. To allow continued use of these components, even with repetitive inspections, would greatly increase the potential for a trailing edge flap skew. With regard to the commenter's concern about parts availability, we have reviewed available data and find that an adequate supply of parts should be available. We have made no change to this final rule in this regard.

We also do not concur with the other commenter's request that we include the cost associated with replacing the gearboxes or U-joints in the AD. The economic analysis included in AD actions is limited only to the cost of actions actually required by the rule. It does not consider the costs of "on-condition" actions, such as replacing a part if a discrepancy is detected during a required inspection. Such "on-condition" actions would be required to be accomplished—regardless of AD direction—to correct an unsafe condition identified in an airplane and to ensure operation of that airplane in an airworthy condition, as required by the Federal Aviation Regulations.

### **Request To Revise Repetitive Interval for Paragraph (e) of Proposed AD**

One commenter requests that we increase the repetitive interval for the inspections of the gearbox assemblies and U-joints that would be required by paragraph (e) of the proposed AD. The proposed AD states a repetitive interval of 3,000 flight cycles or 24 months, whichever is first; the commenter requests an interval of 4,500 flight cycles or 48 months, whichever is later. To justify its request, the commenter presents data from three airplanes in its fleet. These data show that no discrepancies were found on two of the airplanes, and only minor wear of one torque tube was found on the third. The commenter also contends that calendar time is not useful for gauging wear, as wear is a function of flight cycles.

We do not concur. Three airplanes do not constitute an adequate statistical sample size to determine that extension of the repetitive interval would provide an acceptable level of safety. While in general the number of flight cycles is a large contributor to wear on components, the intent of this AD is to protect against all types of wear. This includes wear accelerated by corrosion, which is a function of calendar time. We have made no change to the final rule in this regard.

## **Explanation of Additional Change to Proposed AD**

We have added paragraph (i)(2) to this final rule to give credit for accomplishment of certain alternative methods of compliance that were approved previously in accordance with AD 92-25-01, amendment 39-8416.

Also, throughout this final rule, we have changed the citation for Boeing Service Bulletin 757-27-0107, dated June 16, 1994, to exclude the Evaluation Form. The form is intended to be completed by operators and submitted to the airplane manufacturer to provide input on the quality of the service bulletin; however, this AD does not include such a requirement.

## **Conclusion**

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

## **Cost Impact**

There are approximately 979 Model 757-200, -200CB, and -200PF series airplanes of the affected design in the worldwide fleet.

In AD 92-25-01, we estimated that approximately 279 U.S.-registered airplanes would be subject to the inspections in that AD. For these airplanes, the currently required inspections take approximately 2 work hours per airplane, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the currently required actions on U.S. operators is estimated to be \$33,480, or \$120 per airplane, per inspection cycle.

We estimate that approximately 283 U.S.-registered airplanes (Group 1 of Boeing Service Bulletin 757-27A0125, Revision 2) will be subject to the required inspection of torque tube assemblies 3 and 6. This inspection will take approximately 2 work hours per airplane, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of this new inspection required for U.S. operators of Group 1 airplanes is estimated to be \$33,960, or \$120 per airplane, per inspection cycle.

We estimate that approximately 376 U.S.-registered airplanes (Groups 1 and 2 of Boeing Service Bulletin 757-27A0125, Revision 2) will be subject to the required inspection of torque tube assemblies 4 and 5. This inspection will take approximately 2 work hours per airplane, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of these new inspections required for U.S. operators of Groups 1 and 2 airplanes is estimated to be \$45,120, or \$120 per airplane, per inspection cycle.

We estimate that 643 U.S.-registered airplanes (Groups 1, 2, and 3 of Boeing Service Bulletin 757-27A0125, Revision 2) will be subject to the new required inspections of the gear box assemblies and U-joints of the drive shaft assembly. These inspections will take approximately 4 work hours per airplane, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of these new inspections required for U.S. operators is estimated to be \$154,320, or \$240 per airplane, per inspection cycle.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Should an operator elect to accomplish the modification that involves replacement of torque tube assemblies 3 and 6, this modification will take approximately 5 work hours per airplane, at an average labor rate of \$60 per work hour. Required parts will cost approximately \$4,550. Based on these figures, the cost impact of this optional modification is estimated to be \$4,850 per airplane.

Should an operator elect to accomplish the modification that involves replacement of torque tube assemblies 4 and 5, this modification will take approximately 5 work hours per airplane, at an average labor rate of \$60 per work hour. Required parts will cost approximately \$4,550. Based on these figures, the cost impact of this optional modification is estimated to be \$4,850 per airplane.

## **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. Section 39.13 is amended by removing amendment 39-8416 (57 FR 54298, November 18, 1992), and by adding a new airworthiness directive (AD), amendment 39-13109, to read as follows:

# AIRWORTHINESS DIRECTIVE

Aircraft Certification Service  
Washington, DC



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "www.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2003-07-13 Boeing:** Amendment 39-13109. Docket 2001-NM-329-AD. Supersedes AD 92-25-01, Amendment 39-8416.

**Applicability:** Model 757-200, -200CB, and -200PF series airplanes; line numbers (L/Ns) 1 through 979 inclusive; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (i)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent separations in the drive system for the inboard trailing edge flaps, which could cause a flap skew condition that could result in damage to the flaps or fuselage, and consequent reduced controllability of the airplane, accomplish the following:

## **Restatement of Requirements of AD 92-25-01**

### *Repetitive Visual Inspections and Corrective Actions*

(a) For airplanes with L/Ns 1 through 411 inclusive and 413 through 432 inclusive: Prior to the accumulation of 2,000 total flight cycles, or within the next 200 flight cycles after April 30, 1990 (the effective date of AD 90-08-16, amendment 39-6574), whichever occurs later, and thereafter at intervals not to exceed 2,000 flight cycles, perform a general visual inspection of the torque tube 3 and 6 coupling splines, in accordance with Boeing Service Letter 757-SL-27-52-B, dated April 30, 1990.

**Note 2:** Operators who have conducted inspections of the torque tube coupling splines prior to December 23, 1992 (the effective date of AD 92-25-01, amendment 39-8416), in accordance with Boeing Service Letter 757-SL-27-52, dated January 31, 1990, or Boeing Service Letter 757-SL-27-52-A, dated March 21, 1990, are considered to be in compliance with paragraph (a) of this AD.

(1) If the measurement over the pin, as detailed in the service letter, is less than 1.8605 inches but equal to or greater than 1.8533 inches, repeat the inspection within 1,000 flight cycles, until the requirements of paragraph (c) or (f) of this AD have been accomplished.



(2) If the measurement over the pin, as detailed in the service letter, is less than 1.8533 inches, replace the coupling before further flight, in accordance with the service letter.

### **New Requirements of This AD**

**Note 3:** For the purposes of this AD, a general visual inspection is defined as: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

### **New Repetitive Inspections: Torque Tubes 3 and 6**

**Note 4:** If the requirements of paragraph (f) of this AD have been accomplished before the effective date of this AD, inspection per paragraph (b) of this AD is not required.

(b) For airplanes with L/Ns 1 through 411 inclusive and 413 through 432 inclusive, which are identified as Group 1 airplanes in Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002: Do a general visual inspection for excessive wear of torque tube assemblies 3 and 6, per the Accomplishment Instructions of the service bulletin. Wear may include, but is not limited to, corrosion or axial or radial freeplay relative to adjacent torque tubes or gearbox. Do the initial inspection at the time specified in paragraph (b)(1) or (b)(2) of this AD, as applicable. If no wear is found, repeat the inspection at intervals not to exceed 3,000 flight cycles or 24 months, whichever comes first, until paragraph (f) of this AD has been accomplished. Doing paragraph (b) of this AD terminates the requirements of paragraph (a) of this AD for torque tube assemblies 3 and 6.

(1) For airplanes on which the inspection in paragraph (a) of this AD has been done prior to the effective date of this AD: Inspect within 3,000 flight cycles after the most recent inspection done prior to the effective date of this AD per paragraph (a) of this AD, or within 24 months after the effective date of this AD, whichever is first.

(2) For airplanes on which the inspection in paragraph (a) of this AD has not been done prior to the effective date of this AD: Inspect prior to the accumulation of 3,000 total flight cycles, or within 24 months after the effective date of this AD, whichever is later.

### **New Repetitive Inspections: Torque Tubes 4 and 5**

**Note 5:** If the requirements of paragraph (g) of this AD have been accomplished before the effective date of this AD, inspection per paragraph (c) of this AD is not required.

(c) For airplanes with L/Ns 1 through 580 inclusive, which are identified as Groups 1 and 2 airplanes in Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002: Prior to the accumulation of 3,000 total flight cycles, or within 24 months after the effective date of this AD, whichever is later, do a general visual inspection for excessive wear of torque tube assemblies 4 and 5, per the Accomplishment Instructions of the service bulletin. Wear may include, but is not limited to, corrosion or axial or radial freeplay relative to adjacent torque tubes or gearbox. If no wear is found, repeat the inspection at intervals not to exceed 3,000 flight cycles or 24 months, whichever comes first, until paragraph (g) of this AD has been accomplished.

## **Corrective Actions: Torque Tubes 3, 4, 5, and 6**

(d) If any wear (including, but not limited to, corrosion or axial or radial freeplay relative to adjacent torque tubes or gearbox) is found during any inspection required by paragraph (b) or (c) of this AD: Before further flight, measure the distance of the measurement over pins, per the Accomplishment Instructions of Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002.

(1) If the distance is 1.8337 inches or more, repeat the general visual inspection required by paragraph (b) or (c) of this AD at the applicable interval specified in Table 1 of Figure 7 of the service bulletin, until the actions in paragraphs (f) (for torque tube assemblies 3 and 6) and (g) (for torque tube assemblies 4 and 5) have been done.

(2) If the distance is less than 1.8337 inches, do the actions in paragraphs (d)(2)(i) and (d)(2)(ii) of this AD, per the Accomplishment Instructions of the service bulletin.

(i) Before further flight, measure the distance of the outside diameter, as shown in Table 1 of Figure 7 of the service bulletin.

(ii) Replace the affected torque tube assembly with a new torque tube assembly at the applicable time specified in Table 1 of Figure 7 of the service bulletin.

## **New Repetitive Inspections: Gearbox Assemblies and Universal Joints**

(e) For airplanes with L/Ns 1 through 979 inclusive: Prior to the accumulation of 3,000 total flight cycles, or within 24 months after the effective date of this AD, whichever is later, perform an inspection to measure the axial movement of the angle and tee gearbox assemblies and the distance between the upper and lower yokes of the universal joints (U-joints) of the drive shaft assemblies, per the Accomplishment Instructions of Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002. Repeat these measurements at intervals not to exceed 3,000 flight cycles or 24 months, whichever comes first, and do paragraphs (e)(1) and (e)(2) of this AD, as applicable.

(1) If any measurement of the axial movement of the gearbox assembly is more than 0.015 inch, as specified in the service bulletin: Before further flight, replace the gearbox assembly with a new gearbox assembly, per the Accomplishment Instructions of the service bulletin.

(2) If the distance between the upper and lower yokes of the U-joints is more than 0.020 inch, as specified in Steps 3 and 6 of Figure 6 of the service bulletin: Before further flight, replace the drive shaft assembly with a new drive shaft assembly, per the Accomplishment Instructions of the service bulletin.

## **Optional Terminating Action**

(f) For airplanes with L/Ns 1 through 411 inclusive and 413 through 432 inclusive: Replacing torque tube assemblies number 3 and 6 with new, improved torque tube assemblies, and installing a sealant plug in the shafts of four gearboxes, per the Accomplishment Instructions of Boeing Service Bulletin 757-27-0099, dated March 12, 1992, terminates the inspections required by paragraphs (a) and (b) of this AD.

(g) For airplanes with L/Ns 1 through 580 inclusive: Replacing torque tube assemblies number 4 and 5 with new, improved torque tube assemblies, and changing the related angle and tee gearbox assemblies, per the Accomplishment Instructions of Boeing Service Bulletin 757-27-0107, dated June 16, 1994, excluding Evaluation Form, terminates the inspections required by paragraph (c) of this AD. The changes for the related tee and angle gearbox assemblies are shown in Figures 6 and 7, respectively, of the service bulletin.

**Note 6:** No terminating action has been identified for the inspections specified in paragraph (e) of this AD.

### **Credit for Actions Accomplished Previously**

(h) Inspections, measurements, and replacements done prior to the effective date of this AD per Boeing Alert Service Bulletin 757-27A0125, dated July 17, 1997; or Revision 1, dated December 2, 1999; are considered acceptable for compliance with the corresponding requirements of paragraphs (b), (c), (d), and (e) of this AD.

### **Alternative Methods of Compliance**

(i)(1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

(2) Alternative methods of compliance, approved previously in accordance with AD 92-25-01, amendment 39-8416, are approved as alternative methods of compliance with paragraph (a) of this AD.

**Note 7:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

### **Special Flight Permits**

(j) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

### **Incorporation by Reference**

(k) The inspections and corrective actions shall be done in accordance with Boeing Service Letter 757-SL-27-52-B, dated April 30, 1990; and Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002; as applicable. The modifications, if accomplished, shall be done in accordance with Boeing Service Bulletin 757-27-0099, dated March 12, 1992; and Boeing Service Bulletin 757-27-0107, dated June 16, 1994, excluding Evaluation Form; as applicable.

(1) The incorporation by reference of Boeing Service Bulletin 757-27A0125, Revision 2, dated July 25, 2002; and Boeing Service Bulletin 757-27-0107, dated June 16, 1994, excluding Evaluation Form; is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Boeing Service Letter 757-SL-27-52-B, dated April 30, 1990; and Boeing Service Bulletin 757-27-0099, dated March 12, 1992; was approved previously by the Director of the Federal Register as of December 23, 1992 (57 FR 54298, November 18, 1992).

(3) Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**Effective Date**

(l) This amendment becomes effective on May 20, 2003.

Issued in Renton, Washington, on April 4, 2003.

Vi L. Lipski,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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